

CLAIMS

What is claimed is:

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1. A receive path of a voice messaging system with speakerphone capability, comprising:
- a receive signal from a telephone line;
 - a summer in said receive path;
 - a gain module; and
 - a message playback signal relating to a pre-recorded voice
- 10 message;
- wherein said message playback signal is combined with said receive signal by said summer, allowing simultaneous hearing by a local user of said speakerphone.
- 15 2. The receive path of a voice messaging system with speakerphone capability according to claim 1, further comprising:
- a switched loss module in said receive path.
- 20 3. The receive path of a voice messaging system with speakerphone capability according to claim 1, further comprising:
- a hybrid echo canceler adapted to remove a transmit signal from said receive signal, said transmit signal including said message playback signal;
- 25 wherein said message playback signal is combined in said receive path at a point after said hybrid echo canceler.

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4. The receive path of a voice messaging system with speakerphone capability according to claim 1, further comprising:

a message gain module between said message playback signal and said summer.

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5. The receive path of a voice messaging system with speakerphone capability according to claim 4, wherein said message gain module comprises:

an automatic gain control portion; and

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a fixed gain portion.

6. The receive path of a voice messaging system with speakerphone capability according to claim 1, wherein said gain module comprises:

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a automatic gain control portion; and

a fixed gain control portion.

7. The receive path of a voice messaging system with speakerphone capability according to claim 2, wherein:

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said switched loss echo suppression module is located in said receive path at a point after said gain module.

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8. The receive path of a voice messaging system with speakerphone capability according to claim 2, further comprising:

a digital to analog converter in said transmit path at a point after said switched loss echo suppression module.

9. The receive path of a voice messaging system with speakerphone capability according to claim 1, further comprising:

5 a receive voice activity detector in communication with said receive path, said receive voice activity detector indicating a receive condition of said speakerphone.

10. The receive path of a voice messaging system with speakerphone capability according to claim 1, wherein:

10 said voice messaging system is a telephone answering device.

11. The receive path of a voice messaging system with speakerphone capability according to claim 1, further comprising:

15 a conversational record signal formed from a gained representation of said receive signal summed with a gained representation of a transmit signal to said telephone line.

12. The receive path of a voice messaging system with speakerphone capability according to claim 11, wherein:

20 said gained representation of said receive signal is formed using both automatic gain control and fixed gain.

13. The receive path of a voice messaging system with speakerphone capability according to claim 11, wherein:

25 said gained representation of said transmit signal is formed using both automatic gain control and fixed gain.

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14. A method of allowing a playback message signal to be combined with a receive signal in a voice messaging system having speakerphone capability, comprising:

- 5 hybrid echo canceling a transmit signal from a receive signal at a summer in a receive path of a voice messaging system having speakerphone capability;
- summing a playback message signal together with said hybrid echo cancelled signal at a point in said receive path after said summer; and
- 10 maintaining said speakerphone in a receive state until transmit activity is detected.

15. Apparatus for allowing a playback message signal to be combined with a receive signal in a voice messaging system having speakerphone capability, comprising:

- means for hybrid echo canceling a transmit signal from a receive signal at a summer in a receive path of a voice messaging system having speakerphone capability;
- means for summing a playback message signal together
- 20 with said hybrid echo cancelled signal at a point in said receive path after said summer; and
- means for maintaining said speakerphone in a receive state until transmit activity is detected.

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comprising:

16. A method of playing back a recorded voice message,
- establishing a telephone call;
 - initiating a speakerphone function of a near end voice
 - 5 messaging device in said telephone call;
 - playing back a voice message recorded on said near end
 - voice messaging system while said telephone call remains established;
 - and
 - injecting an electrical signal corresponding to said played
 - 10 back voice message into said telephone call such that individual users at
 - either end of said telephone call can hear said played voice message and
 - concurrently converse with one another as desired.

17. The method of playing back a recorded voice message
- 15 according to claim 14, wherein:
- said voice messaging system is a telephone answering
- device.

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18. The method of playing back a recorded voice message
- according to claim 14, wherein:
- said electrical signal is injected digitally.

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19. Apparatus for playing back a recorded voice message,
 comprising:
 means for establishing a telephone call;
 means for initiating a speakerphone function of a near end
 5 voice messaging device in said telephone call;
 means for playing back a voice message recorded on said
 near end voice messaging system while said telephone call is established;
 and
 means for injecting an electrical signal corresponding to said
 10 played back voice message into said telephone call such that individual
 users at either end of said telephone call can hear said played voice
 message and concurrently converse with one another as desired.

20. The apparatus for playing back a recorded voice
 15 message according to claim 17, wherein:
 said voice messaging system is a telephone answering
 device.

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21. The apparatus for playing back a recorded voice
 20 message according to claim 17, wherein:
 means for injecting said electrical signal injects said signal
 digitally.

22. A method of recording a conversation, comprising:
 25 activating speakerphone operation of a near end telephone
 system; and
 while said speakerphone operation is activated, recording a
 conversation utilizing said speakerphone.